

ABSTRACT

Multilevel pattern registration is achieved by modifying the shape of an exposure pattern according to deviation of the shape of a microlithographically defined pattern due to distortion produced on a substrate. A substrate to be exposed is pretreated in a given manner. The substrate is photographed to obtain image data (1). Processing for extracting feature points is performed from the image data. Results of the extraction of feature points and design pattern data to be exposed are compared (2). Processing for detecting amounts of deviations is performed (3). Using results of the processing for detecting amounts of deviations, processing for modifying shapes of images in the design pattern data is performed (4). The images obtained by the results of the processing for modifying the shapes of the images are produced as an exposure pattern by an exposure image generator (5). The exposure pattern is exposed onto the exposed substrate (6).